WHAT IS CLAIMED IS:

1. A transmission mechanism for driving four wheels of an automotive vehicle comprising

a driving power input shaft connected with a motor of the automotive vehicle;

a first driving power input gear rotably mounted on the driving power input shaft;

a first slidable engaging member slidably mounted on the driving power input shaft;

a second driving power input gear mounted on the driving power input shaft;

a first differential mechanism including a first half shaft sleeve, a second half shaft sleeve, and a first ring gear engaged to the first driving power input gear;

a second differential mechanism including a third half shaft sleeve, a fourth half shaft sleeve, and a second ring gear engaged to the second driving power input gear;

a first core shaft passing through the first differential mechanism;

a second core shaft passing through the second differential mechanism;

a second slidable engaging member for coaxially connecting the first core shaft with the second core shaft;

a first gear rotably mounted on the second half shaft sleeve;

a second gear rotably mounted the fourth half shaft sleeve;

a first gear shaft engaged to the first gear for driving a wheel decelerator of the automotive vehicle;

a second gear shaft engaged to and the second gear for driving a wheel decelerator of the automotive vehicle;

a first connecting member connected with the first core shaft for driving a wheel decelerator of the automotive vehicle; and

a second connecting member connected with the second core shaft for driving a wheel decelerator of the automotive vehicle, wherein the first slidable engaging member can be regulated to engage the first driving power input gear, so as to drive different wheels of the automotive vehicle.

2. The transmission mechanism of claim 1, wherein the second slidable engaging member can be regulated to separate the connection of the first core shaft and the second core shaft so as to drive different wheels of the automotive vehicle.

3. The transmission mechanism of claim 2, wherein the a first driving power input gear has a first larger gear to engage the first ring gear, and a first smaller gear that can engage a first inner gear of the first slidable engaging member.

4. The transmission mechanism of claim 2, wherein the first driving power input gear are mounted on the driving power input shaft by a bearing, and the second driving power input gear is mounted on the driving power input shaft by splines.

5. The transmission mechanism of claim 2, wherein the first slidable engaging member and the second slidable engaging member provides a first recess and a second recess at the outer surface thereof, respectively, for connecting a fork of a clutch of the automotive vehicle.

6. The transmission mechanism of claim 3, wherein the first connecting member and the second connecting member are disposed coaxially with the first core shaft and the second core shaft.

7. A transmission mechanism for driving four wheels of an automotive vehicle comprising

a driving power input shaft connected with a motor of the automotive vehicle;

a first driving power input gear rotably mounted on the driving power input shaft;

a first slidable engaging member slidably mounted on the driving power input shaft;

a second driving power input gear rotably mounted on the driving power input shaft;

a third slidable engaging member slidably mounted on the driving power input shaft;

a first differential mechanism including a first half shaft sleeve, a second half shaft sleeve, and a first ring gear engaged to the first driving power input gear;

a second differential mechanism including a third half shaft sleeve, a fourth half shaft sleeve, and a second ring gear engaged to the second driving power input gear;

a first core shaft passing through the first differential mechanism;

a second core shaft passing through the second differential mechanism;

a second slidable engaging member for coaxially connecting the first core shaft with the second core shaft;

a first gear rotably mounted on the second half shaft sleeve;

a second gear rotably mounted the fourth half shaft sleeve;

a first gear shaft engaged to the first gear for driving a wheel decelerator of the automotive vehicle;

a second gear shaft engaged to and the second gear for driving a wheel decelerator of the automotive vehicle;

a first connecting member connected with the first core shaft for driving a wheel decelerator of the automotive vehicle; and

a second connecting member connected with the second core shaft for driving a wheel decelerator of the automotive vehicle, wherein the first slidable engaging member and the third slidable engaging member can be regulated to engage the first driving power input gear and the second driving power input gear respectively, so as to drive different wheels of the automotive vehicle.

8. The transmission mechanism of claim 7, wherein the second slidable engaging member can be regulated to separate the connection of the first core shaft and the second core shaft so as to drive different wheels of the automotive vehicle.

9. The transmission mechanism of claim 8, wherein the first driving power input gear has a first large gear to engage the first ring gear and a first small gear that can engage a first inner gear of the first slidable engaging member, and the second driving power input gear has a second larger gear to engage the second ring gear and a second smaller gear that can engage a second inner gear.

10. The transmission mechanism of claim 8, wherein the first driving power input gear are mounted on the driving power input shaft by a bearing, and the second driving power input gear is mounted on the driving power input shaft by a bearing.

11. The transmission mechanism of claim 8, wherein the first slidable engaging member, the second slidable engaging member and the third slidable engaging member provide a first recess, a second recess and a third recess at the outer surface thereof, respectively, for connecting a fork of a clutch of the automotive vehicle.

12. The transmission mechanism of claim 9, wherein the first connecting member and the second connecting member are disposed coaxially with the first core shaft and second core shaft.

13. The transmission mechanism of claim 8, wherein both of the first gear and the second gear are arc gears, and both of the first gear shaft and the second gear shaft are arc gear shafts.

14. The transmission mechanism of claim 9, wherein both of the first gear and the second gear are arc gears, and both of the first gear shaft and the second gear shaft are arc gear shafts.

15. The transmission mechanism of claim 10, wherein both of the first gear and the second gear are arc gears, and both of the first gear shaft and the second gear shaft are arc gear shafts.

16. The transmission mechanism of claim 11, wherein both of the first gear and the second gear are arc gears, and both of the first gear shaft and the second gear shaft are arc gear shafts.

17. The transmission mechanism of claim 12, wherein both of the first gear and the second gear are arc gears, and both of the first gear shaft and the second gear shaft are arc gear shafts.

18. The transmission mechanism of claim 13, wherein the first connecting member is an arc gear shaft to engage a third arc gear that is disposed coaxially with the first gear and is engaged thereto, and the second connecting member is an arc gear shaft to engage a fourth arc gear that is disposed coaxially with the second gear and is engaged thereto.

19. The transmission mechanism of claim 14, wherein the first connecting member is an arc gear shaft to engage a third arc gear that is disposed coaxially with the first gear and is engaged thereto, and the second connecting member is an arc gear shaft to engage a fourth arc gear that is disposed coaxially with the second gear and is engaged thereto.

20. The transmission mechanism of claim 15, wherein the first connecting member is an arc gear shaft to engage a third arc gear that is disposed coaxially with the first gear and is engaged thereto, and the second connecting member is an arc gear shaft to engage a fourth arc gear that is disposed coaxially with the second gear and is engaged thereto.